EXPERIMENT - 6

Object Oriented Programming Lab

Aim

To create a class TIME with members hours, minutes and seconds. Take input, add two-time objects and passing objects to function and display the result.

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EXPERIMENT – 6

Aim:

To create a class TIME with members hours, minutes and seconds. Take input, add two-time objects and passing objects to function and display the result.

Source Code:

```cpp
#include <iostream>
using namespace std;
class times{
    int seconds, minutes, hours;

    public:
        void getTime(int h, int m, int s){
            hours = h;
            minutes = m;
            seconds = s;
        }

        void putTime(){
            cout << "The time is " << hours << " hours " << minutes << " minutes " << seconds << " seconds\n";
        }

        void sum(times, times);
};

void times::sum(times t1, times t2){
    seconds = t1.seconds + t2.seconds;
    minutes = seconds / 60;
```

```cpp
        seconds %= 60;

        minutes += t1.minutes + t2.minutes;

        hours = minutes / 60;

        minutes %= 60;

        hours += t1.hours + t2.hours;
    }


    int main(){
        times t1, t2, t3;
        t1.getTime(1, 2, 30);
        t2.getTime(4, 5, 55);
        t3.sum(t1, t2);
        t1.putTime();
        t2.putTime();
        t3.putTime();
        int hour1, minute1, second1, hour2, minute2, second2;
        cout << "Time - 1 \n Enter Hour, minute and second " << endl;
        cin >> hour1 >> minute1 >> second1;
        cout << "Time - 2 \n Enter Hour, minute and second " << endl;
        cin >> hour2 >> minute2 >> second2;
        t1.getTime(hour1, minute1, second1);
        t2.getTime(hour2, minute2, second2);
        t3.sum(t1, t2);
        t1.putTime();
        t2.putTime();
        t3.putTime();
        return 0;
    }
```

Output:

```
PS D:\sem 4\cpp\oops> cd "d:\sem 4\cpp\oops\" ; if ($?) { g++ time.cpp -o time } ; if ($?) { .\time }
The time is 1 hours 2 minutes 30 seconds
The time is 4 hours 5 minutes 55 seconds
The time is 5 hours 8 minutes 25 seconds
PS D:\sem 4\cpp\oops>
```

```
PS D:\sem 4\cpp\oops> cd "d:\sem 4\cpp\oops\" ; if ($?) { g++ time.cpp -o time } ; if ($?) { .\time }
The time is 1 hours 2 minutes 30 seconds
The time is 4 hours 5 minutes 55 seconds
The time is 5 hours 8 minutes 25 seconds
Time - 1
 Enter Hour, minute and second
6 25 30
Time - 2
 Enter Hour, minute and second
7 30 50
The time is 6 hours 25 minutes 30 seconds
The time is 7 hours 30 minutes 50 seconds
The time is 13 hours 56 minutes 20 seconds
PS D:\sem 4\cpp\oops>
```

Viva Questions

1. What do you mean by abstraction in C++?

Ans.

Abstraction is the process of showing the essential details to the user and hiding the details which we don't want to show to the user or hiding the details which are irrelevant to a particular user.

2. Is deconstructor overloading possible? If yes then explain and if no then why?

Ans.

No destructor overloading is not possible. Destructors take no arguments, so there's only one way to destroy an object. That's the reason destructor overloading is not possible.

3. What do you mean by call by value and call by reference?

Ans.

In call by value method, we pass a copy of the parameter is passed to the functions. For these copied values a new memory is assigned and changes made to these values do not reflect the variable in the main function.

In call by reference method, we pass the address of the variable and the address is used to access the actual argument used in the function call. So changes made in the parameter alter the passing argument.